

## CLAIMS

I claim:

- 1        1. A two-wheeled inline gliding skate comprising:
  - 2            a boot having a sole having a toe and a heel thereon;
  - 3            a toe pad mounted on said sole at said toe;
  - 4            a heel pad mounted on said heel;
  - 5            a channel-shaped frame extending centrally, lengthwise of
  - 6            said boot sole and having an upper wall and opposed sidewalls,
  - 7            said frame having a heel pad attachment plate and a toe pad
  - 8            attachment plate located on said frame upper wall attached to
  - 9            said toe pad and said heel pad, respectively;
  - 10           said opposing walls of said frame forming a toe portion
  - 11           extending forward and downward from said toe pad;
  - 12           said opposing walls of said frame forming a heel portion
  - 13           extending rearward and downward from said heel pad;
  - 14           a front wheel and a rear wheel;
  - 15           a front axle supporting said front wheel for rotation;
  - 16           said front axle being supported by said toe portion of said
  - 17           frame between said opposing sidewalls;
  - 18           said front axle of said front wheel being spaced
  - 19           substantially downward from and forward of the toe of said boot;

20 a rear axle supporting said rear wheel for rotation;  
21 said rear axle being supported by said heel portion of said  
22 frame between said opposing sidewalls; and  
23 said rear axle of said rear wheel being spaced substantially  
24 downward from and directly below the rear of said heel of said  
25 boot.

1 2. The in-line skate of claim 1, further comprising an  
2 upper toe piece mounted between said sidewalls of said toe  
3 portion and extending upwards from a point proximate the  
4 periphery of said front wheel to the front intersection of said  
5 toe pad and said toe portion of said boot sole.

1 3. The in-line skate of claim 1, said channel-shaped frame  
2 having a centrally located, inverted arch stiffener mounted to  
3 and extending between said channel sidewalls, said stiffener  
4 being attached at each end thereof to said upper wall of said  
5 channel frame.

1 4. The in-line skate of claim 1, further comprising a brake  
2 system mounted on said frame heel portion comprising in  
3 combination:

4 a hand grip brake control assembly having a hand grip and a  
5 hand lever connected by a brake control body, said hand lever  
6 being rotatable relative to said hand grip;

7 a heel-mounted brake assembly having connecting frame  
8 members extending rearwardly from said frame heel portion and  
9 comprising a brake pad; and

10 an actuator cable and sheath extending from said hand grip  
11 brake control assembly to said heel-mounted brake assembly for  
12 actuation of said brake pad;

13 whereby, upon squeezing said hand lever toward said hand  
14 grip, said actuator cable causes said brake pad to bear against  
15 said rear wheel, thereby causing braking action for said skate.

1 5. The in-line skate of claim 4, said heel mounted brake  
2 assembly comprising;

3 removable, horizontally disposed connecting frames having  
4 respective front mounting ends and rear brake support ends;

5 an inverted "V"-shaped upper brake frame brace extending  
6 upward and rearward at a first angle from and bridging said  
7 respective connecting frame rear brake support ends and having an  
8 upper "V" portion;

9 an inverted "U"-shaped lower brake frame brace extending  
10 upward and rearward at a second angle from and bridging said

11 respective connecting frame rear brake support ends and having an  
12 upper cross portion;

13 said first angle being greater relative to said connecting  
14 frames than said second angle as measured from the rear  
15 horizontal;

16 said upper brake frame brace having a length greater than  
17 said lower frame brace such that said upper "V" portion of said  
18 upper brace is located above said upper cross portion of said  
19 lower frame brace and spaced therefrom;

20 a rotatable pivot bar having a pivot journal at each end  
21 thereof, said pivot bar being mounted above and parallel to said  
22 cross portion of said lower frame brace by said pivot journals;

23 an elongated brake pivot plate having an upper portion, a  
24 central portion, and a lower portion, said central portion being  
25 perpendicularly mounted on said pivot bar;

26 said upper portion of said brake pivot plate having an upper  
27 end and defining a throughbore proximate its upper end for  
28 receiving and engaging said actuator cable; and

29 said lower portion of said brake pivot plate having a lower  
30 end and defining a throughbore proximate its lower end for  
31 mounting said brake pad thereto so as to face forward;

32 whereby, upon operation of said hand lever of said hand grip  
33 brake control, said upper portion of said brake pivot plate is  
34 pulled back causing said lower portion of said brake pivot plate

35 to pivot forward, forcing said brake pad against the rear  
36 periphery of said rear wheel, thereby controlling the rotation of  
37 said rear wheel to control the speed or stop said in-line skate.

1 6. The in-line skate of claim 5, wherein said upper brake  
2 frame brace is mounted to said brake supports at a 45 degree  
3 angle and said lower brake frame brace is mounted to said brake  
4 supports at a 30 degree angle from the horizontal.

1 7. The in-line skate of claim 5, wherein said upper frame  
2 brace has an apex portion, said apex portion including the "V" of  
3 said upper frame brace, said apex portion having a cable sheath  
4 connector and stop attached thereto at said "V" and extending  
5 upward in line with said apex portion.

1 8. The in-line skate of claim 7, wherein said upper frame  
2 brace apex portion is bent forward at an angle past the vertical,  
3 and said cable sheath connector and stop is in the form of a  
4 machine nut having an outer wall and a central bore, said  
5 connector being attached at its outer wall to said "V" of said  
6 apex portion of said upper frame brace such that said central  
7 bore is normal to said apex portion.

1           9. The in-line skate of claim 7, said brake pad having a  
2 rearwardly extending stud having stud nut, said stud extending  
3 through said thoughbore in said lower pivot plate and removably  
4 secured thereto by said stud nut.

1           10. The in-line skate of claim 5, said pivot plate lower  
2 portion being rearwardly curved, said central portion being  
3 planar, and said upper portion being upwardly and rearwardly  
4 curved.

1           11. The in-line skate of claim 4, wherein said grip handle  
2 of said hand brake control assembly being connected at one end to  
3 said brake control body, said hand lever being connected to said  
4 brake control body by a pivot connection, said hand lever  
5 extending along said grip handle so as to allow said hand lever  
6 to rotate inward toward said grip handle, hand lever having a  
7 cable connector proximate said pivot connector, said cable being  
8 connected to said hand lever cable connector, said brake control  
9 body having a cable sheath connector and stop, and said sheath  
10 being connected at its upper end to said brake control body at  
11 said cable sheath connector and stop, whereby, upon squeezing  
12 said hand lever toward said grip handle, said actuator cable is  
13 pulled through said sheath for actuation of said brake pad.

1        12.    The inline skate of claim 7, wherein said brake  
2 actuator cable and sheath has a sheath ferrule located at its  
3 lower end acting as a sheath stop, a sheath connector ferrule  
4 receptor, the lower end of said sheath ferrule extending into  
5 said sheath connector ferrule receptor, a sheath connector  
6 actuator cable guide, the lower end of said ferrule being  
7 connected with said sheath connector actuator cable guide through  
8 which the lower portion of said actuator cable is free to travel,  
9 said actuator cable extending through said bore in said elongated  
10 brake pivot plate upper portion and said actuator cable having an  
11 adjustment fastener attached, said actuator cable being attached  
12 to said adjustment fastener so as to adjust its length relative  
13 to said heel mounted brake assembly.

1        13.    The in-line skate of claim 4, wherein said channel-  
2 shaped frame rear portion has aligned threaded bores therethrough  
3 and said brake connecting frames have mounting screws which  
4 attach said brake connecting frames with said frame rear portion.

1        14.    The in-line skate of claim 9, said brake assembly  
2 further comprising an expanding return spring extending between  
3 said sheath connector and said brake pad stud for retracting said  
4 brake pad from said rear periphery of said rear wheel when said  
5 hand grip brake control is released, allowing said rear wheel to  
6 travel freely.

1        15. The in-line skate of claim 1, said front wheel and said  
2 rear wheel are each between about 80 millimeters and about 90  
3 millimeters in diameter, said front and rear wheels being mounted  
4 for rotation on said respective axles by bearings.

1        16. A four-wheeled inline gliding skate comprising:

2        a boot having a sole having a toe and a heel thereon;

3        a toe pad mounted on said sole at said toe;

4        a heel pad mounted on said heel;

5        a channel-shaped frame extending centrally, lengthwise of  
6 said boot sole and having an upper wall and opposed sidewalls,  
7 said frame having a heel pad attachment plate and a toe pad  
8 attachment plate located on said frame upper wall attached to  
9 said toe pad and said heel pad, respectively;

10       said opposing walls of said frame forming a toe portion  
11 extending forward and downward from said toe pad forming a front  
12 wheel support;

13       said opposing walls of said frame forming a heel portion  
14 extending rearward and downward from said heel pad forming a rear  
15 wheel support;



16       said opposing walls of said frame forming intermediate wheel  
17 supports;  
  
18       a front wheel, a rear wheel, and two intermediate wheels;  
  
19       a front axle supporting said front wheel for rotation;  
  
20       said front axle being supported by said toe portion of said  
21 frame between said opposing sidewalls;  
  
22       said front axle of said front wheel being spaced  
23 substantially downward from and forward of the toe of said boot;  
  
24       a rear axle supporting said rear wheel for rotation;  
  
25       said rear axle being supported by said heel portion of said  
26 frame between said opposing sidewalls;  
  
27       said intermediate wheel supports having respective  
28 intermediate axles supporting said intermediate wheels for  
29 rotation; and  
  
30       said rear axle of said rear wheel being spaced substantially  
31 downward from and directly below the rear of said heel of said  
32 boot.

1        17. The in-line skate of claim 16, further comprising an  
2 upper toe piece mounted between said sidewalls of said toe  
3 portion and extending upwards from a point proximate the  
4 periphery of said front wheel to the front intersection of said  
5 toe pad and said toe portion of said boot sole.

1        18. The in-line skate of claim 16, further comprising a  
2 brake system mounted on said frame heel portion comprising in  
3 combination:

4        a hand grip brake control assembly having a hand grip and a  
5 hand lever connected by a brake control body, said hand lever  
6 being rotatable relative to said hand grip;

7        a heel-mounted brake assembly having connecting frame  
8 members extending rearwardly from said frame heel portion and  
9 comprising a brake pad; and

10       an actuator cable and sheath extending from said hand grip  
11 brake control assembly to said heel-mounted brake assembly for  
12 actuation of said brake pad;

13       whereby, upon squeezing said hand lever toward said hand  
14 grip, said actuator cable causes said brake pad to bear against  
15 said rear wheel, thereby causing braking action for said skate.

1        19. The in-line skate of claim 16, said heel mounted brake  
2 assembly comprising;

3        removable, horizontally disposed connecting frames having  
4 respective front mounting ends and rear brake support ends;

5        an inverted "V"-shaped upper brake frame brace extending  
6 upward and rearward at a first angle from and bridging said  
7 respective connecting frame rear brake support ends and having an  
8 upper "V" portion;

9        an inverted "U"-shaped lower brake frame brace extending  
10 upward and rearward at a second angle from and bridging said  
11 respective connecting frame rear brake support ends and having an  
12 upper cross portion;

13        said first angle being greater relative to said connecting  
14 frames than said second angle as measured from the rear  
15 horizontal;

16        said upper brake frame brace having a length greater than  
17 said lower frame brace such that said upper "V" portion of said  
18 upper brace is located above said upper cross portion of said  
19 lower frame brace and spaced therefrom;

20        a rotatable pivot bar having a pivot journal at each end  
21 thereof, said pivot bar being mounted above and parallel to said  
22 cross portion of said lower frame brace by said pivot journals;

23 an elongated brake pivot plate having an upper portion, a  
24 central portion, and an upper portion, said central portion being  
25 perpendicularly mounted on said pivot bar;

26 said upper portion of said brake pivot plate having an upper  
27 end and defining a throughbore proximate its upper end for  
28 receiving and engaging said actuator cable; and

29 said lower portion of said brake pivot plate having a lower  
30 end and defining a throughbore proximate its lower end for  
31 mounting said brake pad thereto so as to face forward;

32 whereby, upon operation of said hand lever of said hand grip  
33 brake control, said upper portion of said brake pivot plate is  
34 pulled back causing said lower portion of said brake pivot plate  
35 to pivot forward, forcing said brake pad against the rear  
36 periphery of said rear wheel, thereby controlling the rotation of  
37 said rear wheel to control the speed or stop said in-line skate.

1 20. The in-line skate of claim 15, wherein said channel-  
2 shaped frame rear portion has aligned threaded bores therethrough  
3 and said brake connecting frames have mounting screws which  
4 attach said brake connecting frames with said frame rear portion.